

Claims

1        1. A method for increasing the blood levels of secretable  
2        therapeutic proteins in mammals, the method comprising: introducing a  
3        formulation into a target cell, the formulation comprising a DNA construct not  
4        packaged in a viral particle, wherein the construct encodes a functionally active  
5        protein polypeptide that mediates increasing the protein levels in the  
6        bloodstream.

1        2. The method of claim 1, wherein said introducing is by oral  
2        administration.

1        3. The method of claim 1, wherein functionally active protein is  
2        delivered to the bloodstream for a period of from about two to four days.

1        4. The method of claim 1, wherein the target cell is a  
2        gastrointestinal cell other than an intestinal stem cell.

1        5. The method of claim 5, wherein the gastrointestinal cell is  
2        within the small intestine.

1        6. The method of claim 5, wherein the gastrointestinal cell is a cell  
2        within the large intestine.

- 1           7. The method of claim 1, wherein said introducing is by
- 2           parenteral administration.